



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------|-------------|----------------------|---------------------|------------------|
| 09/844,051 | 04/27/2001 | William A. Weber | 2001B035 | 2702 |
| 23455 | 7590 | 01/10/2005 | EXAMINER | |
| EXXONMOBIL CHEMICAL COMPANY | | | DANG, THUAN D | |
| 5200 BAYWAY DRIVE | | | ART UNIT | |
| P.O. BOX 2149 | | | PAPER NUMBER | |
| BAYTOWN, TX 77522-2149 | | | 1764 | |

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/844,051

Applicant(s)

WEBER ET AL.

Examiner

Thuan D. Dang

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-14, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-14, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1764

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1764

Claims 4-10 and 14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suggitt (3,780,123).

Suggitt discloses a process of disproportionation of cumene in the presence of a MOR catalyst to produce a product containing benzene and a mixture of diisopropylbenzene.

It appears that Suggitt discloses using a feed containing no benzene (see the entire patent for details).

Regarding claim 4, applicants claim that the feed is free of added sulfide. From column 3, line 73 thru column 4, line 19, Suggitt suggests that the sulfided catalyst **may** be reduced during use, particularly when alkylbenzene disproportionation is conducted **in the presence of hydrogen**, the introduction of minor amounts of sulfur compounds sulfur compounds into the reaction vessel will maintain the catalyst in a sulfided condition. This means that a process without hydrogen, the adding of sulfur compound is not required since there is no reduction of sulfided catalyst.

The ratio of meta to ortho-diisopropylbenzene can be found on table I.

It appears that Suggitt does not disclose a mordenite as called for in claim 8. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process by selecting a mordenite as called for in claim 8 since it is expected that using any MOR for the Suggitt process yields similar results.

The condition of the process can be found on column 4, lines 17-34.

The product as called for in claim 14 is only a result of a Suggitt process which is operated in the presence of substantially the same catalyst.

Art Unit: 1764

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suggitt (3,780,123) in view of Calabro et al (6,049,018)

Suggitt discloses a process as discussed above.

Suggitt does not disclose that the cumene is produced from an initial step of alkylating benzene with propylene and benzene is recycled to the alkylation step (see the entire patent to Suggitt for details). However, Calabro discloses an alkylation of benzene with propylene for production of cumene (col. 7, lines 26-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process by incorporating the alkylation step of Calabro into the Suggitt process and using the cumene produced by the Calabro alkylation step since it is expected that using any source of cumene yield similar products.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process having been incorporated with the alkylation of Calabro by recycling any benzene in the disproportionation product to the alkylation to increase the production.

Response to Arguments

Applicant's arguments filed 12/16/2004 have been fully considered but they are not persuasive.

The argument Suggitt requires the presence of sulfided hydrogenation metal and teaches that the catalyst would deactivate rapidly without the metal, thereby teaching away from the

Art Unit: 1764

present invention is not persuasive since the claimed process does not disclose excluding a sulfided catalyst.

The argument that Suggitt requires a sulfide compound added to the reaction mixture to maintain catalyst activity is not persuasive as discussed in the above rejection.

Allowable Subject Matter

Claim 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang
Primary Examiner
Art Unit 1764

09844051.20050107

A handwritten signature in black ink, appearing to read 'Thuan D. Dang', with a stylized, sweeping flourish extending to the right.